



**USER GUIDE** 









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**OPERATION & MAINTENANCE MANUAL** 

Translation of the original guide

Rev.: 7 | 30/10/2023

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#### 1.- SAFETY



This symbol will always go along the instructions to prevent material damages, personal injuries or avoid risky situations for persons.

Not following these instructions will lead to harms which ROJO won't be responsible for.

#### MAINTENANCE TASKS TO BE DONE ON VEHICLE

- This vehicle is a critical safety system. Please proceed carefully with maintenance procedures. A careless work may cause damages and/or accidents.
- Block lowbed wheels properly when working under the unit.
- Use solid wheel chocks under the lowbed doing works that require removing wheels.
- When removing heavy parts, fasten them on a safe way.
- Avoid unnecessary contact will oils and lubricants. Apply lotion on areas that are not protected.
- Leave a safety distance with the moving elements of the system when activating hydraulic components.
- Check that manual steering is disconnected and is kept like this when working over moving elements of the system.
- Surface of cylinder pin can be damaged easily. Damages will lead to leaks.
- To check hydraulic components, use the right tools for high pressures generated inside the hydraulic system.
- Use only original ROJO spares in maintenance and repairing works.

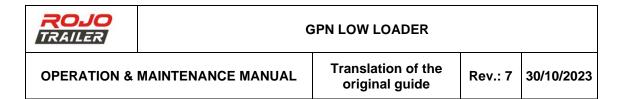
## **ENVIRONMENT**

- Don't throw away used oil, lubricants or hydraulic fluid on drains, culverts or the ground. These practices are not only forbidden but also will seriously contaminate the environment.
- Used oils, lubricants and hydraulic fluids must be treated by companies authorised for its recycling. All these used fluids must be stored separately.
- Used batteries must be treated by companies authorised for its recycling.

## READY-MADE ELECTRIC WIRING



It is forbidden to manipulate or cut any prefabricated electric wire to change its length. This can cause damages or interfere in the right functioning of the system.



## 2.- TECHNICAL DATA

## **ELECTRIC SYSTEM**

Voltage: 24 V

Electro pump: 2,2 Kw.

Electro pump fuse: 200 A

Power source cable from tractor truck battery to electro pump: 50 mm²

#### LUBRICANT GREASE FOR THE STEERING RODS

Vehicle leaves factory with high quality lithium soap ENI type AGRIP NV/EP 2.

For a new greasing, please use the following greases or with a similar quality.

#### HYDRAULIC OIL

Vehicle is fitted at the factory with oil NEWTOIL HM-22. This is a mineral hydraulic oil with low content in zinc and a high viscosity to which it has been added additives against wearing, oxidation, rust and foam. This oil can adapt perfectly to extreme and changing conditions.

ISO	6743/4 HM
DIN	51.524 Part 2
DENISON	HF 0
EATON (VICKERS)	35 VQ. V104C
CINCINNATI-MILACRON	H-17672 D
AFNOR	NF E 48603 HM



It is not permitted to mix different types of oils or refill the system biodegradable oil without written authorization ROJO.



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## 3.- ADAPTATION TO TRACTOR TRUCK

ROJO steered lowbed electro pump needs power supply (+24volts) from tractor truck battery. That is why is needed to install an electric plug NATO VG 96 917 on tractor truck.

#### **PLUG INSTALLATION**

NATO VG 96 917 Plug, has 2 pins for connection as shown in this drawing. (fig. 3.1)

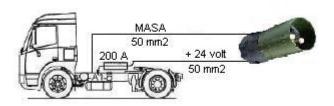


Fig. 3.1 Installation scheme

- Connect pin (+) to battery +24 volts with a 50 mm<sup>2</sup> cable and a 200<sup>a</sup> fuse on the output exit.
- Connect pin ( ) to mass with 50 mm<sup>2</sup> cable.

To determine wire length, please remind that when coupling the lowbed, it will be connected to its relative plug on front side of the lowbed, together with the rest of electric and air connections (fig. 3.2).



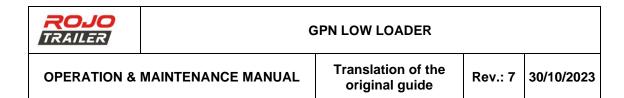
Fig. 3.2 NATO VG 96 917 lowbed connector



Assembling of wiring system and length of the wires must allow the free turning of the lowbed avoiding that it get hooked with other components or tighten up when turning.



It is recommended to place a switch to isolate the connector when it is not connected to its plug on the lowbed.



## 4.- OPERATING

#### 4.1.- COUPLING/UNCOUPLING OF TRACTOR TRUCK

#### **COUPLING OF TRACTOR TRUCK**

- Put tractor truck closer in order to find the right alignment on the King Pin with the 5<sup>th</sup> Wheel.

If height on 5<sup>th</sup> Wheel matches with neck height, proceed to coupling under the standard procedure.

If height on 5th Wheel doesn't matches with neck height, please level neck for a right coupling height, using landing legs before proceeding.



Plug in all connections between tractor truck and lowbed.

#### TRACTOR TRUCK DECOUPLING



Unplug all connections between tractor truck and lowbed.

- Proceed for coupling under the standard procedure.
- Move tractor truck away completely, on a straight line.



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## 4.2.- LOADING



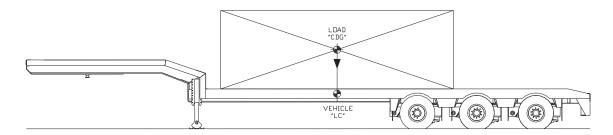
Please make loading and unloading operations with caution. When loading, respect a right sharing of loads.

Load Center Point on the vehicle LC is marked on one of the sides of the main platform by a stick. (fig. 4.1).

This stick marks the LC of the vehicle









To ensure a right share of the load, we have to match the load Centre of Gravity CDG with the Load Center Point LC of the vehicle.



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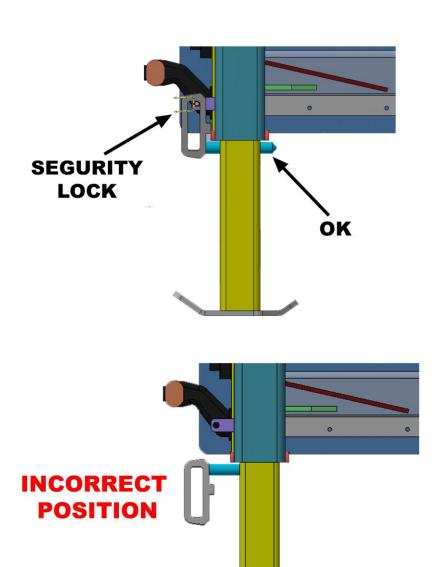
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Before loading or unloading, check that the axle of the rear landing leg is in good position and secured.



If this element is not in correct position and not secured, it can harm persons or objects.



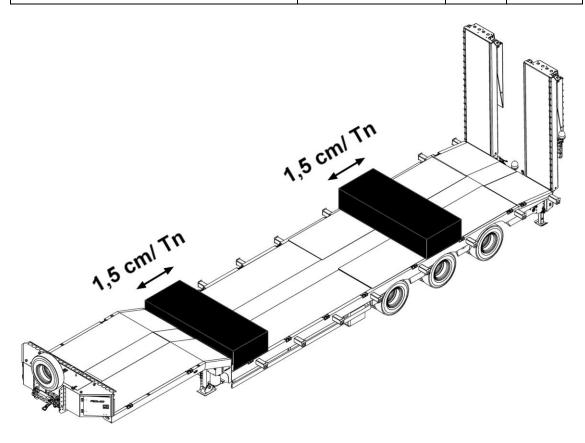


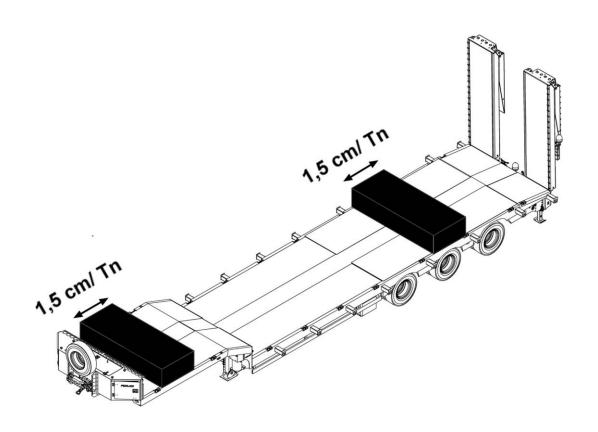
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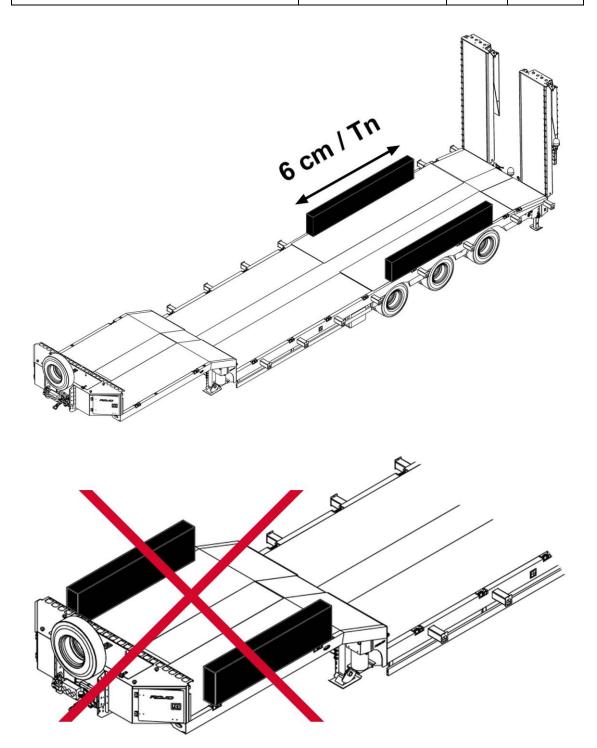


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Lateral loads are forbidden in the neck



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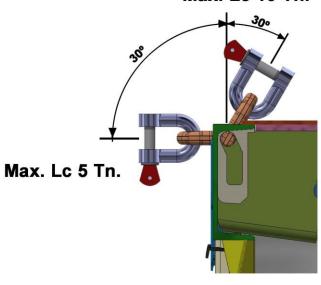


Respect max load of lashing rings. Chek ring registration (fig. 4.2)

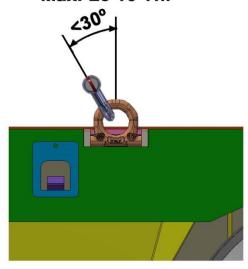
Fig. 4.2 Lashing rings



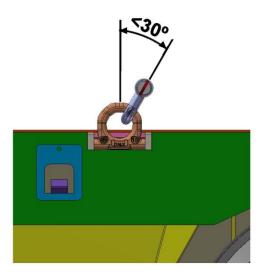
Max. Lc 10 Tn.



Max. Lc 10 Tn.



Max. Lc 10 Tn.





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## 4.3.- LIFTABLE FRONT AXLE (OPTIONAL)

Control of lifting axles is automatic and depends on the load carried. Switch (fig. 4.3) is used to disconnect the automatic lift exceptionally.



Switch has to be ALWAYS in "I" position (fig. 4.4).

exceptional cases, out of public roads.





Fig 4.3 Lifting axle switch



## 4.4.- UP / DOWN LOADING PLATFORM



Driving out of ride height is only permitted up to 10 Km/h just to avoid some obstacles on the road, but only occasionally.

Loading Platform can go up and down using the Up&Down pneumatic valve (fig. 4.5).

- Press and turn levers right and left to raise or lower platform height.
- Push out the lever to return to ride height.



Once we pass the obstacle, immediately return to ride height pressing out the lever.



Fig. 4.5 Oscillating Neck button pad



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# 4.5.- UP / DOWN CENTRAL RAMP (OPTION)



It is forbidden to remain below or near the ramps during this operation. Danger of crushing people or objects.

The central ramp can only be lowered with load on it.

The central ramp are operated by lever # 4 of the Distributor + the control panel, which activates the pump (fig 4.6 and fig 4.7).

- Follow stickers instructions.



Fig. 4.6 Distributor ramp situation



Fig. 4.7 ramps control panel and levers





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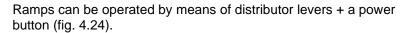
## 4.8.- UP / DOWN RAMPS (OPTIONAL)



It is forbidden to stay under or near the ramps during this operation. Risk of crushing damages on persons or objects if ramps fall down.



Before operating ramps, release security cable on the ramps (fig. 4.22) and lower ramp supports (fig. 4.23).



Lever 1 (fig.4.24) is used to up and down ramps.

Lever 2 (fig.4.24) is optional for left ramp side displacement.

Lever 3 (fig.4.24) is optional for right ramp side displacement.

Power button 5 (fig.4.24) is used to switch on the pump.

- Follow stick indications.



Once finished this operation, fasten ramps with security cable (fig. 4.22) and upload ramp supports (fig.4.23).

## 4.9.- SELF-STEERING AXLE (OPTIONAL)

Self-steering axle is automatically blocked when driving backward.



Check axle blocking before driving backward.

It is also automatically blocked when driving forward above 40 Km/h and released under 35 Km/h.

However, you can block it permanently driving forward and backward by means of manual switch (fig. 4.25) in position "I" (fig. 4.26)



To drive with self-steering axle disconnect blocking switch (position "0").



Fig. 4.8 Security cable ramps



Fig. 4.9 ramps distributor situation



Fig. 4.10 ramps control panel and levers



Fig. 4.11 self steering axle blocking switch



Fig. 4.12 switch in "I" position



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#### 5.- MAINTENANCE

#### 5.1.- MAINTENANCE SCHEDULE

Every day: visual inspection of the wheel nuts, tire pressure and wear, operation of the electrical system and the ABS or EBS system, this system gives the vehicle more active safety, more braking efficiency.

#### At 1000 km:

-check tightening of the wheel nuts.

This check must be performed each time a wheel is removed. The tightening torque should be between 600 and 700 Nm.

-Retight the suspension and re-align the axles (Annex 1)

**Every month:** change the grease of the disc of the 5th wheel after cleaning the disc and the KP, of all the elements of the vehicle to grease to ensure the good operation.

**Every 3 months:** check the condition of the brake pads, for disc brakes, this warning light is located on the brake caliper, as indicated on the axle maintenance manual. For drum brakes, the warning light is located on the automatic brake levers.

Every 6 months: re-tighten the suspension elements and clean the valve filters.

**Once a year:** Check the joints, and also tighten the suspension to ensure proper operation and re-align axles (Annex 1), also clean the valve filters.

These intervals have been made for normal use of the vehicle, reason why, these intervals are shortened in case of using the vehicle in very hard conditions.

In addition to the basic reviews, a thorough inspection is recommended before each trip or suspected of malfunction.

## 5.2- Particularities of maintenance operations

#### GREASE:

- Before greasing, clean the dust, water and mud.
- Inject grease until the lubrication point suppresses clean grease.
- Do not mix oils of different brands or different specifications.

The vehicle leaves the factory with "AGRIP GR MV / EP 2" grease (lytic grease). Use the same or equivalent.

#### **OIL TANK**

To check the oil level, the vehicle must be horizontal and the oil must be cool. If you want to add the oil, ensure the cover and general area cleanliness and use of hydraulic oil according to the following basic data (for other specifications, consult the manufacturer).



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## GENERAL NOTICES ON USE OF HYDRAULIC OILS

- Never mix the oils.
- A good oil, of good quality, ensures a good lubrication and durability of the elements.
- The oil tank must remain closed; The air is sucked by means of a filling cap with the corresponding filter
- Keep the return filters clean.
- -Verify oil level, it should contain 35% to 40% more than the working volume of the cylinders.
- The oil change must be done by experts. Please save the extracted oil and dispose of it according to environmental regulations.

## **HYDRAULIC STRUCTURES:**

Check for leaks.

## STICK AND LIGHTING DEVICES:

Check the cleaning of the stickers and lights.

#### WHEELS AND TIRES:

Check the condition of the tires, circulation belt, sidewalls and make sure there are no cracks.

Check the tire pressure.

#### **CLEANING:**

- Wash the trailer and remove any remaining dirt and adhering materials.

#### AXLES:

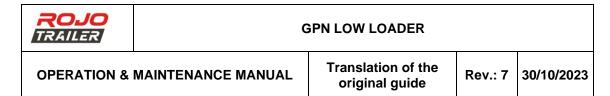
- Follow the instructions in annex 1 and the detailed instructions in the supplier's maintenance manuals.

They can be downloaded from:

**Gigant:** http://www.gigant-group.com

ROR: <a href="http://www.rorcare.net">http://www.rorcare.net</a>

**SAF:** <a href="http://safholland.com">http://safholland.com</a>



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PAY ATTENTION TO MAINTENANCE, GREASING,..ETC. OVER THE AXLES. THIS IS SHOWN IN THE MAINTENANCE BOOK WE ENCLOSE.



IT IS IMPORTANT TO DO FIRST MAINTENANCE OVER ALL BOLTS OF FIXATIONS AND BOLTS, RIGHT AFTER FIRST TRANSPORT WITH LOAD ON THE SEMITRAILER AND 1.000KM TRIP..



90% OF PROBLEMS ON AXLES AND SUSPENSIONS ARE ORIGINATED BY LACK OF TRACKING AND FOLLOW UP OF THESE INSTRUCTIONS. NOT FOLLOWING THE INSTRUCTIONS IT WILL CONSIDER A USE MALFUNCTION, AND WILL FORCE TO VOID WARRANTY FOR THE UNIT.

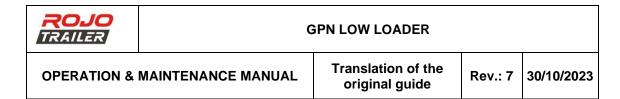


IMPORTANT: AFTER 1ST CHECK-UP, THIS PAPER SHEET HAS TO BE FILLED IN AND SIGNED, AND SEND EMAIL TO : service@rojotrailer.com, ATTACHING THE TECHNICAL DATA SHEET.

IN CASE OF DOUBT OR IF YOU NEED ANY FURTHER INFORMATION ABOUT MAINTENANCE, PLEASE CONTACT OUR AFTER-SALES DEPARTMENT TIF. +34 947 54 64 11.

COMPANY				,	/AT
ADDRESS				C	CITY
				CO	JNTRY
TELEPHONE					
U	NIT INFO	W	ARRANT DATE		
MODEL		O.P.			
CHASSIS NUMBER					

DAY	WORK DONE		
	WPRKSHOP	STAMP	



# DIAGRAMS OF LIGHTS AND CONNECTIONS TO THE TRUCK:

# **General outline of electrical lighting installation:**

Drawing 6M0D52416LED

Connections to the truck:

		SYM	BOL LE	GEND			SYME	OL LE	GEND		
ymbol						<b>®</b>		+		+	Sym
<del>,,</del>	Masse	Earth	massa	Masse	Masa	Тегга	Massa	Jord	jord	maa	(J
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	Blinker rechts	RH rear direction indicator	freccia destra	Clignotant droit	Intermitente derecho	Pisca direito	knipperlicht Rechts	Høyre blinklys	blinker höger	vilkku oikea	(4
	Bremslicht	stop	stop	Feu stop	Luz de freno	Freio	Rem licht	Bremselys	bromsljus	jarruvalo	C
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E	Standlicht rechts	RH Tail	posizione destra	Feu de position droit	Lus posición derecha	Luz de posição direita	Achterlamp Rechts	Høyre parklys	parkljus höger	parkki oikea	()
‡	Nebelschluss- leuchte	rear fog	retronebbia	Feu de brouillard	Luz antiniebla	Luz de neblina	Mist lamp	Täkelys	dimljus	sumuvalo	(
E)	Rückfahrleuchte	reverse	retromarcia	Feu de recul	Luz marcha atrás	Luz de Ré	Achteruitrij lamp	Baklys	backljus	peruutusvalo	
H	All. Stromversor- gung (+)	permanent power supply	positivo perma- nente	Alimentation élec- trique permanente (+)	corriente continua	corrente continua	Constante stroomverzorging	Allmenn strøm- forsyvning	allmänn strömförsörjning	jatkuva virta	(
<u></u>	Achsanhebung	axle lift	Sollevatore	Relevage d'essieu	dispositivo de ele- vación del eje	dispositivo de ele- vação do eixo	Aslift	Akselløft	axellyft	akselinosto	(P
D	Federspeicheran- zeige	braking control	Controllo funzioa- mento freni	Contrôle freinage remorque	Control de frenos para trailers	Controle de fun- cionamento dos freios	Remailinder markering	Bremseindikator	bromsindikator	jousijarrun ilmaisin	
);	Verschleißanzeige	brake pad wear Indicator	Controllo usura pastiglie	Témoin d'usure des plaquettes de frein	Indicador de desgaste de las pastillas de freno	Indicador de des- gaste de pastilhas de freio	Remslijtage indi- cator	Slitasjeindikator	slitageindikator	jarrujen kulumisen ilmaisin	(
D	Masse für Elektro- niken	Earth - Data	Massa per elett- ronica	Masse des éléments électro- niques	masa funciones electrónicas	Terra para funções eletrô- nicas	Massa Data	Jord for elektro- nikk	jord för elektronik	elektroniikan maa	(
REE	freie Wahl	unallocated	libero	Libre	Libre elección	Livre	Vrije positie	Fritt valg	fritt val	vapaa	FR



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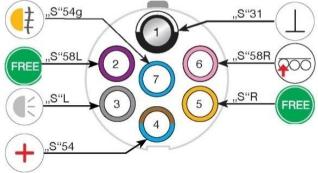
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ISO 3731 7 pin







ISO 1185 7 pin



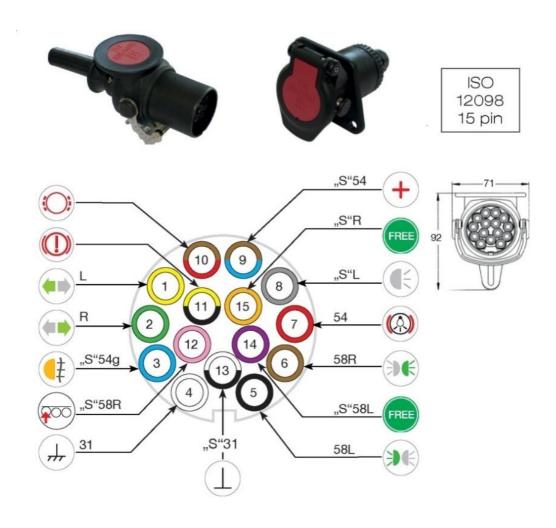


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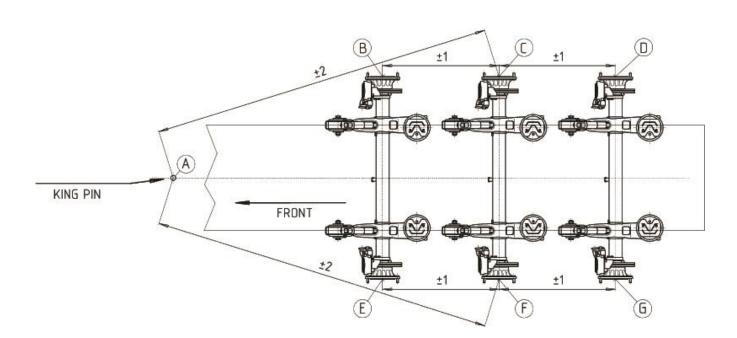


<b>ROJO</b> TRAILER	G	SPN LOW LOADER		
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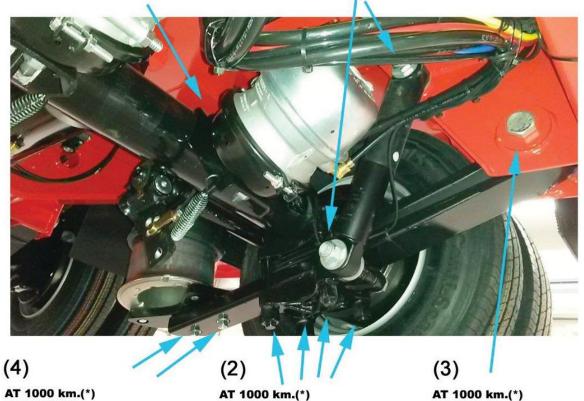
# ANEXO 1

# Realizar siempre a los 1000 km. y cada año.

Determine the lengths of the diagonals A - C and A - F for the middle axle(reference axle) by comparison measurements, observing the tolerances( $\pm 2$  mm). Check the wheelbases B - C and E - F for the front axle and C - D and F - G for the rear axle and correct, if necessary, observing the tolerances( $\pm 1$  mm).



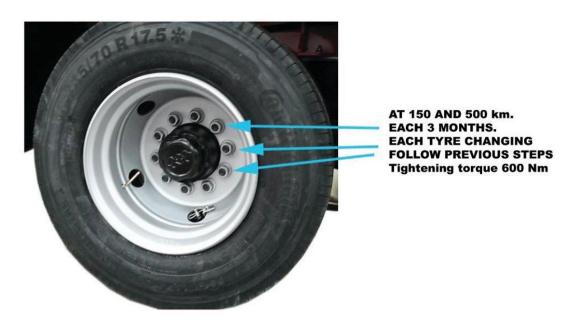
(5) AT 1000 km.(\*) EACH YEAR. ROR. Tightening torque 70 Nm SAF. Tightening torque 40 Nm (1) AT 1000 km.(\*) EACH YEAR. ROR. Tightening torque 300 Nm SAF. Tightening torque 400 Nm



AT 1000 km.(\*)
EACH YEAR.
ROR. Tightening torque 180 Nm
SAF. Tightening torque 180 Nm

AT 1000 km.(\*)
EACH YEAR.
ROR. Tightening torque 800 Nm
SAF. Tightening torque 580 Nm

AT 1000 km.(\*) EACH YEAR. ROR. Tightening torque 1100 Nm SAF. Tightening torque 1200 Nm



(\*) ES NECESARIO QUE SE HAYA REALIZADO ALGUN VIAJE CARGADO

# SAF MODUL

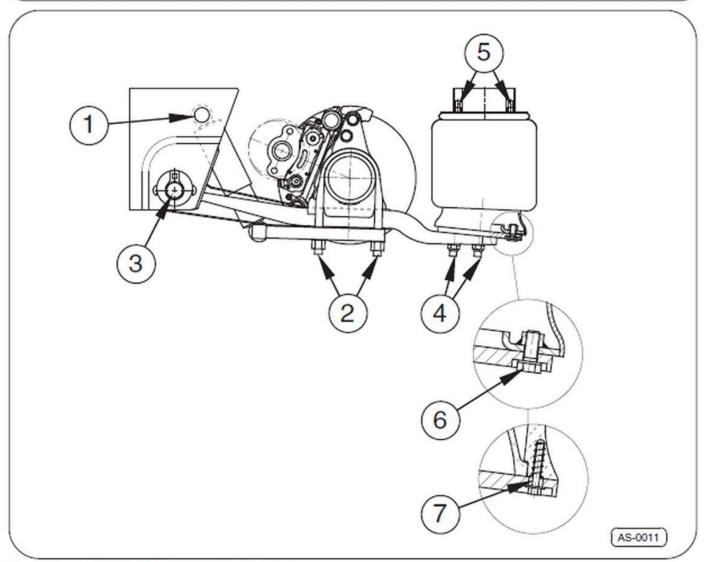


Fig. 12 · SAF MODUL inspection torque

Item.	Screw connection	Inspection torque (Nm)	Width across flats
-1-	M24x2	400	36
-2-	M22x1,5	580	32
-3-	M30	1200	46
-4-	M20	180	30
-5-	M12	40	19
<del>-6-2)</del>	M12	80	19
-7- <sup>3)</sup>	K100x40	20	10

